

Remarks

The Applicants have amended Claim 19 to place it into proper form for allowance with respect to antecedent basis. Claim 19 has also been amended to recite that the lower limit of N is 0.0070. This provides a range of N of 0.0070 to 0.0250%. Support for the lower limit of 0.0070 may be found on page 69 in lines 14-15. Entry into the official file is respectfully requested.

The Applicants acknowledge the rejection of Claims 19 and 20 under 35 U.S.C. §103 over EP'430. The Applicants note with appreciation the Examiner's detailed comments concerning the applicability of EP'430 to the solicited Claims.

The Applicants respectfully submit that Claims 19 and 20 are patentable over EP'430 generally because the steels therein and the process of making those steels are generally quite different, irrespective of surface similarities. In particular, EP'430 relates to a steel sheet having excellent hardenability and non-cold-aging characteristics. Careful consideration of EP'430 reveals that it discloses a steel that is relatively quite low in the content of N. This is seen by reference to the description of N on page 8 beginning at line 50 and by reference to the numerous examples in EP'430.

The general description of N is quite instructive in EP'430 wherein it states that "a smaller amount of N in the steel is preferable." It also recites that "when the amount of N therein is excessively large, the use of Al in a large amount becomes necessary, and the formability of the steel is deteriorated." The concluding statement in that paragraph recites that "the upper limit of the amount of N is defined to be 0.0060%."

The relatively low content of N in the EP'430 steels is explicitly confirmed in the examples

as recited in various of the tables such as Table 1 and Table 5. Table 1 contains 20 different steels having maximum percentages of N at about 0.0025. Those ranges extend downwardly to 0.0016. Table 5 is quite similar inasmuch as the upper most limit of N is 0.0033, while the lower limit is 0.0015.

It is accordingly quite clear from the entire EP'430 disclosure that the steels disclosed therein are low N containing steels. Moreover, EP'430 cautions that the amount of N should not exceed the defined upper limit of 0.0060 because a large of amount of Al is necessary and the formability of the steel deteriorates.

The Applicants went in a completely different direction and employ higher amounts of N. As noted above, Claim 19 specifically recites a range of 0.0070 to 0.0250. This is significantly higher than EP'430. This is confirmed by reference to the Applicants' examples wherein much greater quantities of N are present. Table 1 is particularly instructive wherein the lowest inventive example has a minimum N content of 0.009.

The higher amounts of N are important in Claims 19-20, wherein mutual associations between dissolved N and dislocation which is introduced by plastic processing are utilized. This allows high strain age hardenability to be achieved.

Also, when the definition of "N/AL is 0.3 or more" is considered, it is quite advantageous as the amount of N increases, from the viewpoint of securing strain age hardenability. In sharp contrast, EP'430 discloses in the description referring to the reasons for restricting the steel composition that, a smaller amount of N in the steel is preferable and strain age hardenability is imparted by re-dissolved C during annealing. Hence, EP'430 is quite dissimilar to the subject matter of Claims 19-20 in terms of technical concept. The range of N in EP'430 is defined mainly in view of the control


of the composition and an amount of N of over 40ppm is not found in the examples.

The amount of N of Claims 19-20 is set within a range between 0.0070 and 0.0250%. This improves stability of the quality of the product and improves the yield when also considering the whole manufacturing process.

What those of ordinary skill in the art glean from EP'430 is that the objective of that disclosure is to control the amount of N to a very small amount. The Applicants utilize a substantially increased amount of N and there is nothing in EP'430 that would lead one of ordinary skill in the art to make modifications to EP'430 to increase the amount of N. As noted above, EP'430 affirmatively cautions against such an increase. Nonetheless, the Applicants defied those teachings and successfully brought about the invention as recited in Claims 19-20. As a consequence, the Applicants respectfully submit that Claims 19-20 are fully patentable over EP'430. Withdrawal of the rejection is accordingly respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,


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